Abstract No. Chan0090

Transferrin/Transferrin Receptor Interactions

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Beamline(s): X28C

Transferrin receptors (TfR) provide for controlled access of transferrin (Tf) to cells. It has been shown that transferrin binds to the receptor in 2:2 (Tf:TfR subunit) stoichiometry. However, the binding sites of transferrin to its receptor remains ambiguous. A proposed model for the binding of transferrin to a subunit evisions a lateral cleft evident in the subunit structure as accommodating the transferrin molecule, predominantly by interaction of the C-lobe with a complementary region of the receptor. Mutagenesis work on TfR incriminates a conserved sequence of TfR as critical to Tf-binding, somewhat at variance with this model. This project aims the identification of the binding interface of transferrin with its receptor. Preliminary work has been focus on the calculation of the solvent accessibilities of the residues, the digestion optimization, and dose response curves for the peptides of C-lobe derived from tryptic digestion. We found that C-lobe was digested completely by trypsin after dialysis against citrate buffer. The solvent accessibility with the modification rate for individual peptide has also been correlated.